White, M. 2014. *Trifolium lappaceum* (Fabaceae): New to Oklahoma with comments on the species in Texas. Phytoneuron 2014-70: 1–4. Published 1 July 2014. ISSN 2153 733X

# *TRIFOLIUM LAPPACEUM* (FABACEAE): NEW TO OKLAHOMA WITH COMMENTS ON THE SPECIES IN TEXAS

MATT WHITE
882 Hwy 24
Campbell, Texas 75422

## ABSTRACT

***Trifolium lappaceum*** is reported new in Oklahoma. On 11 June 2014 it was collected in Idabel, McCurtain County, Oklahoma, where it was naturalized on both highly disturbed and relatively undisturbed blackland prairie grassland near the entrance to the McCurtain County Regional Airport. Its status using the Fundamental Invasiveness Index of Nesom (2009) is discussed for both the Oklahoma site and the eastern edge of north-central Texas, with the suggestion that it is now likely more common in both north-central Texas and Oklahoma than is currently realized.

*Trifolium lappaceum* L., lappa clover or burdock clover, is found natively in Mediterranean Eurasia and Africa (Isely 1998). It is one of several non-native *Trifolium* species that are conquering the southeastern USA. It is an annual that is easily distinguished from all other introduced clovers in the region by the 20-ribbed glabrous calyx lobes that have pilose tips (Isely 1998). The common name comes from the bur-like appearance of the fruiting heads.

In the USA there are records from every state in the Deep South (south of the 37$^{th}$ parallel) except Oklahoma and Georgia. Additionally, California, Pennsylvania, and New Jersey now host the species (BONAP 2013). This collection adds Oklahoma to the list of states now known to harbor the species as well.

Voucher. **Oklahoma**. McCurtain Co.: W of Hwy 70 N of entrance to McCurtain County Airport, especially abundant along intermittent drainage and culvert 300 feet N of entrance, 33° 54' 41.25" N, 94° 51' 08.30"W, 11 Jun 2014, *M. White s.n.* (BAYLU).

At this site, *Trifolium lappaceum* was a frequent component of the roadside vegetation as well as highly disturbed grassland west of Hwy 70 (on airport property). It was particularly common along a small sunny drainage 300 yards north of the entrance to the airport. Associate species included weedy species *Bromus japonicus*, *Sorgum halpense*, *Trifolium campestre* and *Toxicodendron* sp., as well as *Rudbeckia hirta* and *Centaurea americana*. Immediately east of Hwy 70 in the more undisturbed grassland it was found to be an infrequent associate with *Dalea compacta* var. *compacta*, *Manfreda virginica* subsp. *virginica*, *Clinopodium arkansana*, *Rudbeckia missouriensis*, *Castilleja purpurea*, and *C. indivisa*. Using the "Fundamental Invasiveness Index" developed by Nesom (2009), at least locally, it would be currently ranked F2 because it was abundant and widespread in disturbed sites but less common in natural habitats. However, the mowing regime at the site is sure to spread the species and it has the potential to become an F1 invasive even in the undisturbed parts of this site. Additional fieldwork in Oklahoma will be necessary to determine how widespread it has become regionally or statewide.

In adjacent Texas it was first reported by Brown and Peterson (1984) based on collections from two southeast Texas counties—Harris and Hardin—both in May 1979. Turner et al (2003) did not map the Hardin location but added three additional nearby counties—Chambers, Liberty, and Walker. Keith (2013) called it a "rapidly spreading naturalized species" but offered no additional localities.

Two additional collections reported by Carr (1994), from Camp Maxey in Lamar County near the Red River, established the species as disjunct in north-central Texas and were the source of the inclusion in Diggs et al (1999); however in the interim no additional county records have been reported from this area (BONAP 2013). In 2013 it was found to be extremely common at Camp Maxey, but only along mowed roadways, and was growing with another invasive clover, *T. arvense* (pers. obs.). That year it was also discovered as a lawn weed in the author's yard and locally along area roadsides at Campbell, Hunt County, on the extreme eastern edge of north-central Texas but was only photographed, not collected. In 2014, though, the population there was noted to have "exploded," with the species now found extensively along local roadsides as well as in grazed pastures (pers. obs.). In Texas, Nesom (2009) assigned the species a Fundamental Invasiveness Index rating of F3, which meant the species generally occurs in small numbers or is known from typically from only a few disturbed sites. Personal observations of the species from eastern Hunt County would now support the ranking of F2.

Figure 1. *Trifolium lappaceum*, close up of flowering head. Idabel, Oklahoma, 11 June 2014.

Unlike several other introduced species of *Trifolium* (i.e., *T. vesiculosum*, *T. incarnatum*, *T. resupinatum*, and *T. pratense*), which have large or colorful and conspicuous flowering heads that are easily spotted alongside the roadside even from a fast-moving vehicle, the small white flowers and flowering heads of *T. lappaceum* are much more inconspicuous and do not draw attention. Thus it is likely this species is more widely distributed in northern Texas and Oklahoma than is known at the present time. Additional records should be sought elsewhere in both states.

Figure 2. *Trifolium lappaceum*. Idabel Oklahoma, 11 June 2014. Left: detail of flowering head and upper cauline leaves. Right: detail of fruiting head and upper cauline leaves.

**ACKNOWLEDGEMENTS**

I would like to thank Guy Nesom for his editorial advice and expertise.

**LITERATURE CITED**

BONAP. 2013. North American Plant Atlas (US county-level species maps). Biota of North America Program, Chapel Hill, North Carolina. Last update: May 2013 <http://www.bonap.org/genera-list.html>

Brown, L.E. and C.D. Peterson. 1984. *Carex rosea* (Cyperaceae), *Trifolium lappaceum* (Fabaceae) and *Aira carophyllea* (Poaceae) new to Texas. Sida 10: 263-264.

Carr, B. 1994. Preliminary checklist of vascular plants, Camp Maxey, Lamar County, Texas. Unpublished October 1994.

Diggs, G.M. Jr., B.L. Lipscomb, and R.J. O'Kennon. 1999. Shinners & Mahler's Illustrated Flora of North Central Texas. Sida, Bot. Misc. 16.

Isely, D. 2008. Native and Naturalized Leguminosae (Fabaceae) of the United States. Monte L. Bean Life Science Museum, Brigham Young University, Provo.

Keith, E. 2013. *Trifolium nigrescens* (Fabaceae), new to the Texas flora. Phytoneuron 2013-32: 1–6.

Nesom, G.L. 2009. Assessment of invasiveness and ecological impact in non-native plants of Texas. J. Bot. Res. Inst. Texas 3: 971–991.

Turner, B.L., H. Nichols, G. Denny, and O. Doron. 2003. Atlas of Vascular Plants of Texas. Vol. 1. Sida, Bot. Misc. 24: 1–648.